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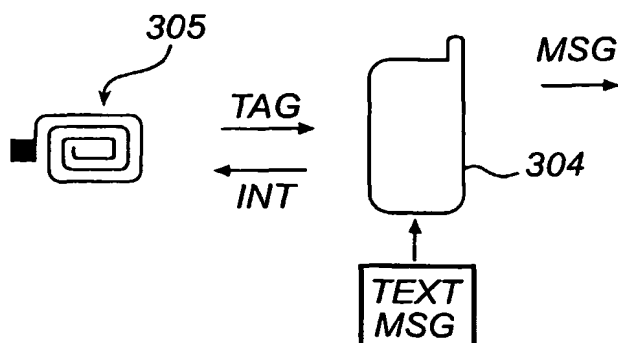
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- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: A METHOD FOR CREATING MULTIMEDIA MESSAGES WITH RFID TAG INFORMATION



(57) Abstract: The present invention relates to a method in a portable, digital device for generating a multimedia message, comprising a multimedia object, and to such a digital portable device. The method involves the following steps: a) emitting an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal; b) receiving such a response signal, which includes tag information, associated with a multimedia object; and c) initiating the transmission of a multimedia message based upon the tag information. This allows a multimedia message to be created without extra work for the user.

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A method for creating multimedia messages with RFID tag information.

Technical field

The present invention relates to method in a portable, digital device for generating a multimedia message according to the preamble of claim 1, a portable, digital device according to the preamble of claim 8 and a product according to the preamble of claim 12.

Background art

10 So called SMS-messaging (SMS=Short Message Service) has become enormously popular over the last few years. Even though SMS-messages are restricted to texts with strictly limited lengths, the possibility of sending such a message is attractive for the user.

15 An MMS-message (MMS=Multimedia Message Service) is an enhanced form of message as compared to SMS-messages. MMS allows the message to contain multimedia objects, such as for instance video clips, images or sound information. This of course entails more expressive messages.
20 Instead of just sending text, the user may create a message which contains multimedia objects reflecting his lifestyle, mood, whereabouts etc. This increases the value of the message for the sender as well as for the receiver.

25 A problem when creating messages containing multimedia objects comes from the often limited user interfaces of portable devices such as mobile phones. For portability reasons the sizes of keyboards and displays are normally kept small. Whereas mobile phones are relatively well adapted for inputting text, inputting or editing of multimedia objects, such as for instance a melody, may often prove to be tedious.
30

Summary of the invention

An object of the present invention is to wholly or partially obviate the above mentioned problem.

This object is achieved by a method according to
5 claim 1, a portable digital device according to claim 8 and a product according to claim 12.

According to a first aspect the invention relates to a method in a portable, digital device for generating a multimedia message, comprising a multimedia object. The
10 method is characterized by the steps: a) emitting an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal; b) receiving such a response signal, which includes tag information, associated with a multimedia object; and c) initiating
15 the transmission of a multimedia message based upon the tag information.

This allows the creating of a message containing a multimedia object without the user performing extensive manual operations. The RFID-transponder/tag may be at-
20 tached to an object, and multimedia object may be associated with this object, for instance aesthetically. For example the object may be a piece of clothing and the multimedia object may reflect the look of this piece of clothing and hence the lifestyle of the user.

25 In an embodiment of the invention the tag information may include the multimedia object. This makes possible the completion of a multimedia message in the portable, digital device itself.

Preferably, the user is prompted to accept or reject
30 the inclusion of the multimedia object into the message. This makes it possible for the user to choose whether the multimedia object should be sent.

In an alternative embodiment, the tag information is a link to the multimedia object, which is stored in a da-
35 tabase. This makes possible the inclusion of multimedia objects that have a bigger information content than the maximum memory space of the RFID-tag.

In a preferred embodiment, this database is stored in the portable, digital device. This allows the user to preview the multimedia message before it is sent.

In another embodiment, the database is stored in a node in a mobile communication system, where the portable, digital device is registered, or in an internet server, which is accessible for such a node. This allows the user to send a large amount of different sets of multimedia objects, which need not be directly accessible for the portable, digital device.

According to a second aspect, the invention relates to a portable, digital device for generating a multimedia message comprising a multimedia object. The device is characterized by means for emitting an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal, means for receiving a response signal, which includes tag information, associated with a multimedia object; and means for initiating the transmission of a multimedia message based upon the tag information. The portable, digital device entails similar advantages as the above-mentioned method and may be varied similarly.

In a preferred embodiment, the portable, digital device comprises a keyboard and a key-lock functionality, means for emitting an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal, means for receiving such a response signal from the RFID-transponder; and means for activating the key-lock functionality if the response signal indicates that the portable digital device resides within a predetermined range of the RFID-transponder. This allows the automated activation of the key-lock functionality.

In another embodiment, the portable, digital device, which preferably is a mobile phone, is devised to display the multimedia object before transmitting the message. This allows the user to preview the message before it is sent.

According to a third aspect, the invention relates to a product comprising an RFID-transponder. The product is characterized by the transponder comprising tag information corresponding to a multimedia object, wherein the tag information is intended to be retrieved by a portable, digital device for facilitating the creation of a multimedia message.

The product according to this aspect of the invention co-operates with the above portable, digital device and thus entails corresponding advantages.

Brief description of the drawings

Fig 1 illustrates a mobile phone, communicating with an RFID-tag, which is attached to an object.

Fig 2 shows basic components of an RFID-tag.

Fig 3a and 3b illustrate the creating of a multimedia message according to an embodiment of the present invention.

Fig 4a shows the creation and transmission of a multimedia message according to a first embodiment of the present invention.

Fig 4b illustrates the creation and transmission of a multimedia message according to a second embodiment of the present invention.

Fig 5 shows a product provided with an RFID-tag.

Description of preferred embodiments

At first, some abbreviations are explained.

SMS, Short Message Service, is a text message service allowing the transmission of short text messages (160 characters) from or to a mobile phone. SMS is used in the GSM system and employs control channels in the system.

MMS, Multimedia Messaging, refers to an enhanced type of message transmitted to or from a mobile phone. MMS enables also multimedia objects such as graphics, images, video clips and/or sound clips to be transmitted.

RFID, Radio Frequency Identification Transponder (or RFID-tag), refers to a small electronic circuit containing information. Upon stimulation with an electromagnetic field (interrogating signal) by means of an interrogating apparatus (reader), the RFID emits a response signal that may be received by the interrogating apparatus and contains the stored information. Passive RFIDs (unlike active RFIDs) have no internal energy source, but uses the energy of the interrogating signal to create the response. RFID-tags has numerous applications, such as theft protection, marking of domestic animals, access control etc.

Fig 1 illustrates a portable digital device, in this case a mobile phone 101, which is communicating with an RFID-tag 102, attached to an object 103.

The method according to the invention is also applicable to other devices such as for instance PDAs (PDA=Personal Digital Assistant) and therefore the term portable digital device should be interpreted broadly.

The mobile phone 101 has an integrated interrogating apparatus (tag reader) 104, which is used to retrieve information stored in RFID-tags. The interrogating apparatus transmits an interrogating signal 105. This signal stimulates an RFID-tag 102 to transmit a response signal 106, which may be received by the interrogating apparatus 104 in the mobile phone 101. The response signal 106 contains information stored in the RFID-tag 102.

According to an embodiment of the invention, information in the RFID-tag 102 is associated with one or more multimedia objects. These multimedia objects may be aesthetically associated with the object 103, to which the RFID-tag is attached. For instance, if the object 103 is a jacket, belonging to a user and having a particular color and pattern, the multimedia object may correspond to this color and pattern. Then, when the user creates a text message, this message may be provided with a multimedia object that corresponds to a background image, im-

aging the color and pattern. Without extra work the user may therefore create a message having esthetical qualities which he prefers (since he bought the jacket).

RFID-tags of the above-mentioned type may thus be
5 attached to various consumer articles such as vehicles, sports equipment, electronics equipment, records (music may also be attached as a multimedia object), etc. Preferably, exchangeable mobile phone covers may be provided, which comprise such transponders. Corresponding
10 MMOs may then reflect the looks of the covers. Such covers may be manufactured independently of the mobile phones. When using these articles and sending messages over a portable digital device, the messages are enhanced in a manner that reflects the lifestyle of the user.

15 RFID-tags of this kind may however also be placed in restaurants, bars, gyms, etc, producing the same effect.

Fig 2 shows basic components of an RFID-tag 200. The RFID-tag 200, or transponder, comprises a transponder circuit 201, including a memory, and an antenna 202.

20 Fig 3a and 3b illustrate the creating 300 of a multimedia message according to an embodiment of the present invention. Fig 3a is a flowchart defining steps of the method and should be read in conjunction with fig 3b. A portable, digital device, according to an embodiment of
25 the invention, comprises means for performing steps of the method. Such means may preferably be software-implemented.

In a first step a portable, digital device, such as a mobile phone 304, emits 301 an interrogating signal
30 INT, that stimulates an RFID-tag 305 to transmit a response signal TAG. In a second step the response signal TAG, containing tag information, is received 302 by the mobile phone 304. A text message TEXT-MSG may be manually inputted by the user. In a third step the transmission of
35 a message MSG is initiated 303. The message is based upon tag information in the TAG-signal, i.e. it may contain this tag information or information corresponding to the

tag information (for instance information retrieved by means of a lookup table, using the tag information as input data). When this message reaches its destination, it will contain a multimedia object corresponding to the tag information. How this may be obtained in accordance with different embodiments of the invention will be described below.

Fig 4a shows the creation and transmission of a multimedia message according to a first embodiment of the present invention. In this embodiment the tag information (TAG in fig 3b) not only corresponds to, but actually comprises a multimedia object MMO. The MMO may then be combined in the sender with inputted text into a message MSG, which is sent to the receiver. Preferably, the user is prompted to choose whether the MMO should be included in the message or not. The user may then also preview the combined message.

This embodiment of the method according to the invention requires only a portable, digital device, provided with an interrogating apparatus, and an RFID-tag in order to generate the desired message. On the other hand only small MMOs in terms of information content may be used, at least if passive RFID-tags are to be utilized. It is however possible to include information corresponding to a small image or a melody in an RFID-tag.

Fig 4b illustrates the creation and transmission of a multimedia message according to a second embodiment of the present invention. In this embodiment, instead of storing an MMO in the RFID-tag, the tag contains a link to an MMO, which is stored in a database, connected to an MMS-server. The sending mobile phone combines the link data with inputted text into a message, which is subsequently sent. At an MMS-server, an MMO corresponding to the link is added to the message, which is then transmitted to the intended receiver.

The invention also relates to a product, such as the object 103 of fig 1, comprising an RFID-transponder 102.

The transponder comprises tag information corresponding to a multimedia object, which information is intended to be retrieved by a portable, digital device for facilitating the creation of a multimedia message. Such a product also leads to a method for performing payment for using copyright protected information (such as music or images) in multimedia messages. This payment is performed when the product is bought. For instance, if a product with an RFID-tag (e.g. color-cover of a phone or a T-shirt) is printed with a copyright protected picture, the person who owns the product is allowed to use the picture in his/her messages. Copyright is paid in the price of the cover/T-shirt.

Fig 5 illustrates an example of a consumer article, a jacket 501, which is provided with an RFID-tag 502. In this case the RFID-tag 502 is attached to the jacket 501 in the vicinity of a pocket, for example together with the washing instructions. This provides for another possible functionality. Many mobile phones has a key-lock function which is used in order to avoid unintentional calls to be made when mobile phone buttons are accidentally pushed, for instance when the mobile phone is placed in a pocket. To obtain this, it has hitherto been required that the user remembers to switch the key-lock functionality on. The present invention implies a possibility to automate this procedure.

In fig 5, when the RFID-tag 502 is placed in the vicinity of the pocket in the jacket, it is possible for the mobile phone to sense that it has been placed in the pocket and to switch on the key-lock functionality accordingly. The mobile phone then comprises means for emitting an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal, means for receiving such a response signal from the RFID-transponder, and means for activating the key-lock functionality if the response signal indicates that the phone

resides within a predetermined range of the RFID-transponder.

In summary, the present invention relates to a method in a portable, digital device for generating a multimedia message, comprising a multimedia object, and to such a digital portable device. The method involves the following steps: a) emitting an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal; b) receiving such a response signal, which includes tag information, associated with a multimedia object; and c) initiating the transmission of a multimedia message based upon the tag information. This allows a multimedia message to be created without extra work for the user.

The invention is not restricted to the described embodiment. It may be varied within the scope of the appended claims.

CLAIMS

1. Method in a portable, digital device for generating a multimedia message, comprising a multimedia object, characterized by the following steps:

5 a) emitting (301) an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal;

b) receiving (302) such a response signal, which includes tag information, associated with a multimedia object;

10 and

c) initiating (303) the transmission of a multimedia message, based upon the tag information.

2. Method according to claim 1, wherein the tag information includes the multimedia object.

15

3. Method according to claim 2, wherein the user is prompted to accept or reject the inclusion of the multimedia object into the message.

4. Method according to claim 1, wherein the tag information is a link to the multimedia object, which is stored in a database.

20

5. Method according to claim 4, wherein the database is stored in the portable, digital device.

6. Method according to claim 4, wherein the database is stored in a node in a mobile communication system, where the portable, digital device is registered.

25

7. Method according to claim 4, wherein the database is stored in an internet server, which is accessible for a node in a mobile communication system, where the portable, digital device is registered.

30

8. Portable, digital device for generating a multimedia message comprising a multimedia object, characterized by means for emitting an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal, means for receiving such a response signal, which includes tag information, associated with a multimedia object; and means

35

for initiating the transmission of a multimedia message based upon the tag information.

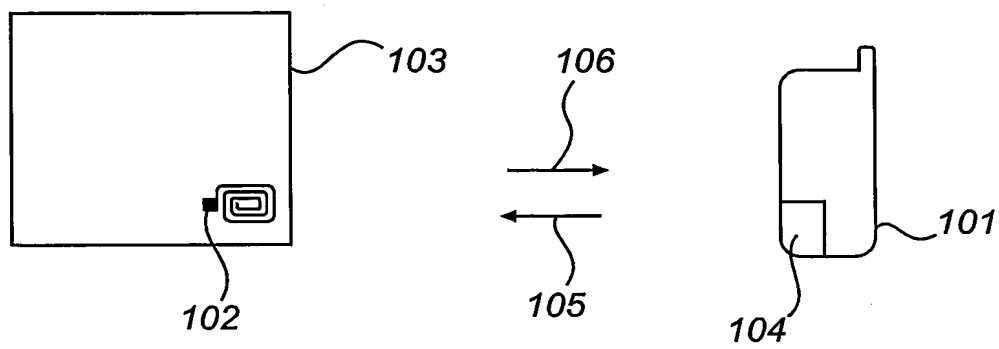
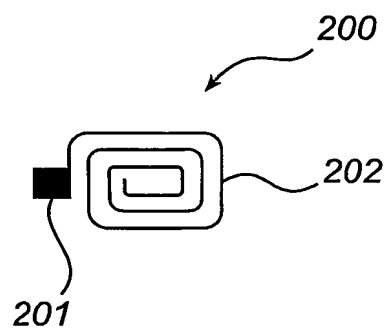
9. Portable, digital device according to claim 8, comprising a keyboard and including a key-lock functionality, means for emitting an interrogating radio signal in order to stimulate an RFID-transponder tag to emit a response signal, means for receiving such a response signal from the RFID-transponder; and means for activating the key-lock functionality if the response signal indicates that the portable digital device resides within a predetermined range from the RFID-transponder.

10. Portable, digital device according to claim 8, which is devised to display the multimedia object before transmitting the message.

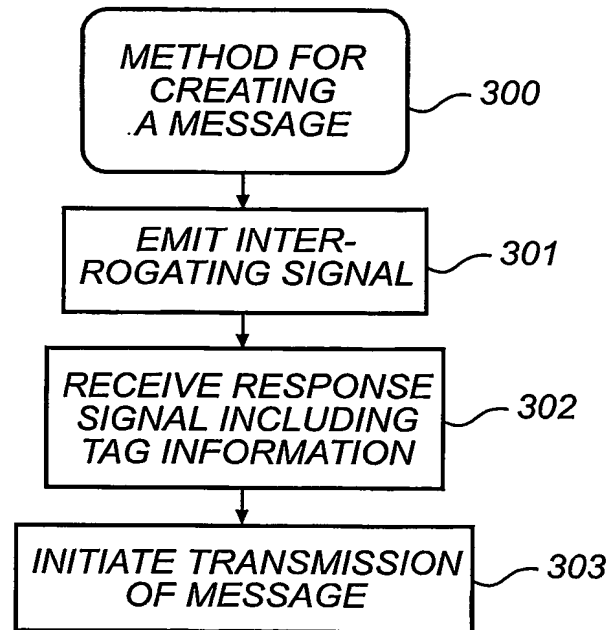
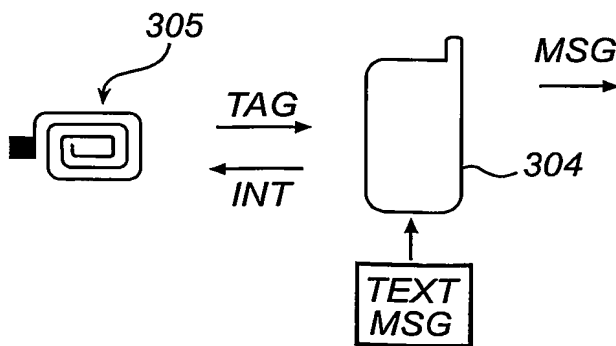
11. Portable, digital device according to any of claims 8-10, wherein the portable, digital device is a mobile phone.

12. Product comprising an RFID-transponder, characterised in that the transponder comprises tag information corresponding to a multimedia object, wherein the tag information is intended to be retrieved by a portable, digital device for facilitating the creation of a multimedia message.

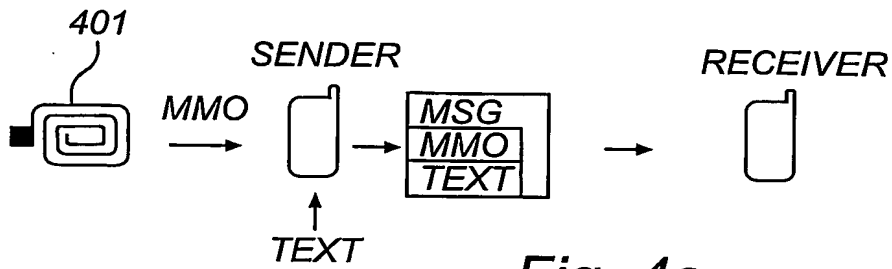
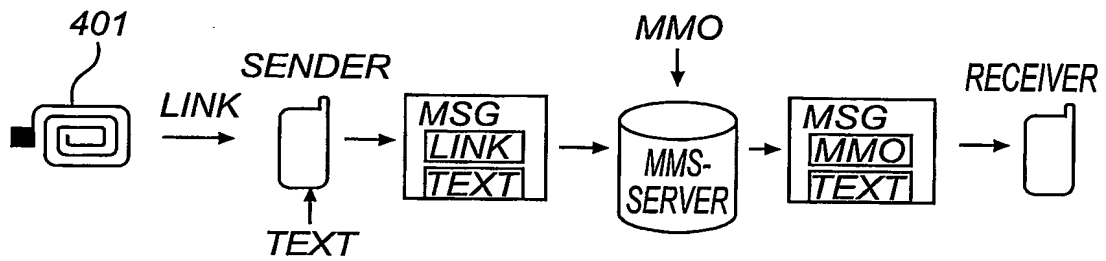
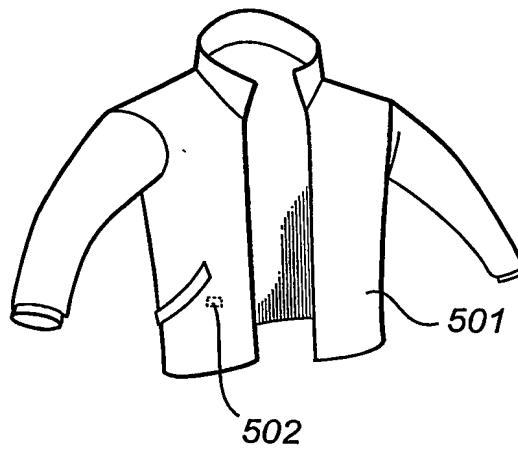
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*Fig. 1**Fig. 2*

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*Fig. 3a**Fig. 3b*

3/3

*Fig. 4a**Fig. 4b**Fig. 5*

INTERNATIONAL SEARCH REPORT

national application No.

P B 02/03516

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06K 7/10 // H04Q 7/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06K, H04Q, H04M, H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | WO 0139103 A1 (TAGMASTER AB), 31 May 2001 (31.05.01), page 2, line 18 - line 29; page 4, line 24 - page 5, line 2, claims 1,3, abstract -- | 1-12 |
| A | DE 10050321 A1 (EURO IQ AG EUROPÄISCHE INNOVATION IN QUALITÄT), 18 April 2002 (18.04.02), column 2, line 24 - line 41; column 3, line 17 - line 20, abstract -- | 1-12 |
| A | WO 0120542 A2 (INTERMEC IP CORP.), 22 March 2001 (22.03.01), page 2, line 15 - line 25, claims 1, 11,14, abstract -- | 1-12 |

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Date of the actual completion of the international search

27 March 2003

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| A | <p>WO 0152179 A2 (3M INNOVATIVE PROPERTIES COMPANY), 19 July 2001 (19.07.01), page 2, line 15 - page 3, line 19, abstract</p> <p style="text-align: center;">-- -----</p> | 1-12 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

30/12/02

International application No.

PCT 02/03516

| Patent document cited in search report | | | Publication date | Patent family member(s) | Publication date |
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| WO | 0120542 | A2 | 22/03/01 | NONE | |
| WO | 0152179 | A2 | 19/07/01 | AU 2768901 A BR 0107554 A EP 1247249 A US 2001008390 A | 24/07/01 08/10/02 09/10/02 19/07/01 |